

chain nodes :

17

ring nodes :

1 2 3 4 5 6 7 8 9 11 12 13 14 15 16

chain bonds :

7-11

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 11-12 11-16 12-13 13-14 14-15 15-16

exact/norm bonds :

5-7 6-9 7-8 7-11 8-9

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16

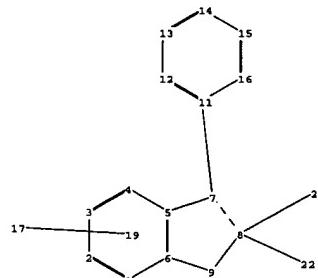
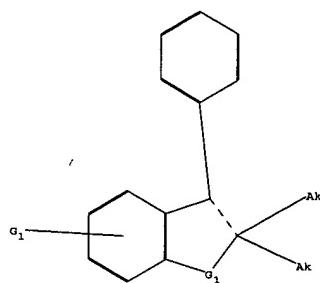
isolated ring systems :

containing 1 : 11 :

G1:O,S

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 11:Atom 12:Atom
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS



chain nodes :

17 21 22

ring nodes :

1 2 3 4 5 6 7 8 9 11 12 13 14 15 16

chain bonds :

7-11 8-21 8-22

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 11-12 11-16 12-13 13-14 14-15 15-16

exact/norm bonds :

5-7 6-9 7-8 7-11 8-9 8-21 8-22

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16

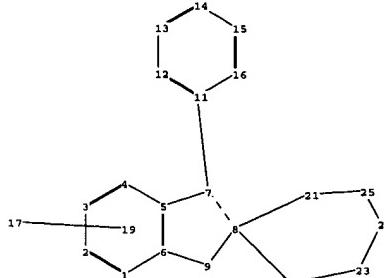
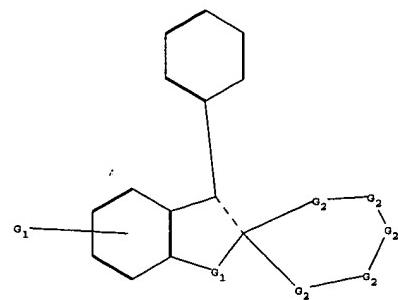
isolated ring systems :

containing 1 : 11 :

G1:0,S

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 11:Atom 12:Atom
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS 21:CLASS 22:CLASS



chain nodes :

17

ring nodes :

1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 21 22 23 24 25

chain bonds :

7-11

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 8-21 8-22 11-12 11-16 12-13 13-14
14-15 15-16 21-25 22-23 23-24 24-25

exact/norm bonds :

5-7 6-9 7-8 7-11 8-9 8-21 8-22 21-25 22-23 23-24 24-25

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 11-12 11-16 12-13 13-14 14-15 15-16

isolated ring systems :

containing 1 : 11 :

G1:O,S

G2:C,N

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 11:Atom 12:Atom
13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 19:CLASS 21:Atom 22:Atom 23:Atom 24:Atom
25:Atom

* * * * * * * * * * Welcome to STN International * * * * * * * * * * *

| | | |
|---------------------|---|---|
| <u>NEWS 1</u> | Web Page URLs for STN Seminar Schedule - N. America
"Ask CAS" for self-help around the clock | |
| <u>NEWS 2</u> | Feb 24 | PCTGEN now available on STN |
| <u>NEWS 3</u> | Feb 24 | TEMA now available on STN |
| <u>NEWS 4</u> | Feb 26 | NTIS now allows simultaneous left and right truncation |
| <u>NEWS 5</u> | Feb 26 | PCTFULL now contains images |
| <u>NEWS 6</u> | Mar 04 | SDI PACKAGE for monthly delivery of multifile SDI results |
| <u>NEWS 7</u> | Mar 24 | PATDPAFULL now available on STN |
| <u>NEWS 8</u> | Mar 24 | Additional information for trade-named substances without structures available in REGISTRY |
| <u>NEWS 9</u> | Apr 11 | Display formats in DGENE enhanced |
| <u>NEWS 10</u> | Apr 14 | MEDLINE Reload |
| <u>NEWS 11</u> | Apr 17 | Polymer searching in REGISTRY enhanced |
| <u>NEWS 12</u> | AUG 22 | Indexing from 1927 to 1936 added to records in CA/CAPLUS |
| <u>NEWS 13</u> | Apr 21 | New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX |
| <u>NEWS 14</u> | Apr 28 | RDISCLOSURE now available on STN |
| <u>NEWS 15</u> | May 05 | Pharmacokinetic information and systematic chemical names added to PHAR |
| <u>NEWS 16</u> | May 15 | MEDLINE file segment of TOXCENTER reloaded |
| <u>NEWS 17</u> | May 15 | Supporter information for ENCOMPPAT and ENCOMPLIT updated |
| <u>NEWS 18</u> | May 19 | Simultaneous left and right truncation added to WSCA |
| <u>NEWS 19</u> | May 19 | RAPRA enhanced with new search field, simultaneous left and right truncation |
| <u>NEWS 20</u> | Jun 06 | Simultaneous left and right truncation added to CBNB |
| <u>NEWS 21</u> | Jun 06 | PASCAL enhanced with additional data |
| <u>NEWS 22</u> | Jun 20 | 2003 edition of the FSTA Thesaurus is now available |
| <u>NEWS 23</u> | Jun 25 | HSDB has been reloaded |
| <u>NEWS 24</u> | Jul 16 | Data from 1960-1976 added to RDISCLOSURE |
| <u>NEWS 25</u> | Jul 21 | Identification of STN records implemented |
| <u>NEWS 26</u> | Jul 21 | Polymer class term count added to REGISTRY |
| <u>NEWS 27</u> | JUL 22 | INPADOC: Basic index (/BI) enhanced; Simultaneous Left and Right Truncation available |
| <u>NEWS 28</u> | AUG 05 | New pricing for EUROPATFULL and PCTFULL effective August 1, 2003 |
| <u>NEWS 29</u> | AUG 13 | Field Availability (/FA) field enhanced in BEILSTEIN |
| <u>NEWS 30</u> | AUG 15 | PATDPAFULL: one FREE connect hour, per account, in September 2003 |
| <u>NEWS 31</u> | AUG 15 | PCTGEN: one FREE connect hour, per account, in September 2003 |
| <u>NEWS 32</u> | AUG 15 | TEMA: one FREE connect hour, per account, in September 2003 |
| <u>NEWS 33</u> | AUG 15 | RDISCLOSURE: one FREE connect hour, per account, in September 2003 |
| <u>NEWS 34</u> | AUG 18 | Data available for download as a PDF in RDISCLOSURE |
| <u>NEWS 35</u> | AUG 18 | Simultaneous left and right truncation added to PASCAL |
| <u>NEWS 36</u> | AUG 18 | FROSTI and KOSMET enhanced with Simultaneous Left and Right Truncation |
| <u>NEWS 37</u> | AUG 18 | Simultaneous left and right truncation added to ANABSTR |
| <u>NEWS EXPRESS</u> | April 4 | CURRENT WINDOWS VERSION IS V6.01a, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0jb(JP), AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003 |
| <u>NEWS HOURS</u> | | STN Operating Hours Plus Help Desk Availability |
| <u>NEWS INTER</u> | | General Internet Information |
| <u>NEWS LOGIN</u> | | Welcome Banner and News Items |
| <u>NEWS PHONE</u> | | Direct Dial and Telecommunication Network Access to STN |
| <u>NEWS WWW</u> | | CAS World Wide Web Site (general information) |

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* * * * *, *

FILE 'HOME' ENTERED AT 08:20:33 ON 08 SEP 2003

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=> file reg
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY        SESSION
FULL ESTIMATED COST          0.21          0.21
```

FILE 'REGISTRY' ENTERED AT 08:20:40 ON 08 SEP 2003
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STRUCTURE FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9
 DICTIONARY FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

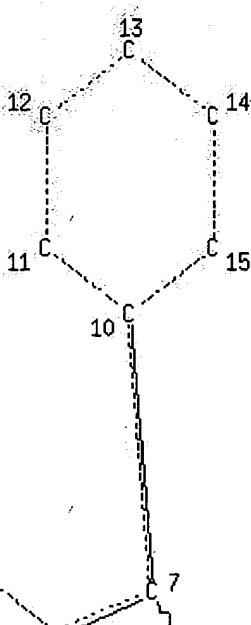
Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

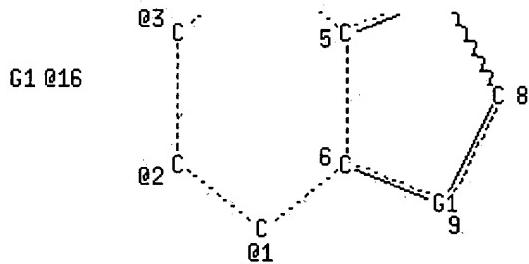
Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

```
=>
L1      STRUCTURE uploaded

=> d 11
L1 HAS NO ANSWERS
L1      STR
0 17 $ 18
Page 1-A
```



Page 1-B



Page 2-B

VAR G1=17/18
VPA 16-1/2/3/4 S

NODE ATTRIBUTES:

| | | | |
|-------|------|----|----|
| NSPEC | IS R | AT | 1 |
| NSPEC | IS R | AT | 2 |
| NSPEC | IS R | AT | 3 |
| NSPEC | IS R | AT | 4 |
| NSPEC | IS R | AT | 5 |
| NSPEC | IS R | AT | 6 |
| NSPEC | IS R | AT | 7 |
| NSPEC | IS R | AT | 8 |
| NSPEC | IS R | AT | 9 |
| NSPEC | IS R | AT | 10 |
| NSPEC | IS R | AT | 11 |
| NSPEC | IS R | AT | 12 |
| NSPEC | IS R | AT | 13 |
| NSPEC | IS R | AT | 14 |
| NSPEC | IS R | AT | 15 |
| NSPEC | IS C | AT | 16 |

DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

=> s 11
 SAMPLE SEARCH INITIATED 08:24:11 FILE 'REGISTRY'
 SAMPLE SCREEN SEARCH COMPLETED - 1143 TO ITERATE

87.5% PROCESSED 1000 ITERATIONS 50 ANSWERS
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
 PROJECTED ITERATIONS: 20832 TO 24888
 PROJECTED ANSWERS: 1390 TO 2586

L2 50 SEA SSS SAM L1

=> s 11 full
 THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 147.75 U.S. DOLLARS
 DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
 FULL SEARCH INITIATED 08:24:17 FILE 'REGISTRY'
 FULL SCREEN SEARCH COMPLETED - 23107 TO ITERATE

100.0% PROCESSED 23107 ITERATIONS 2122 ANSWERS
 SEARCH TIME: 00.00.01

L3 2122 SEA SSS FUL L1

=> file hcplus
 COST IN U.S. DOLLARS SINCE FILE TOTAL
 ENTRY SESSION
 FULL ESTIMATED COST 150.15 150.36

FILE 'HCPALUS' ENTERED AT 08:24:21 ON 08 SEP 2003
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FILE COVERS 1907 - 8 Sep 2003 VOL 139 ISS 11
 FILE LAST UPDATED: 7 Sep 2003 (20030907/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 13
 L4 629 L3
 => file reg

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 2.25 | 152.61 |

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STRUCTURE FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9
 DICTIONARY FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

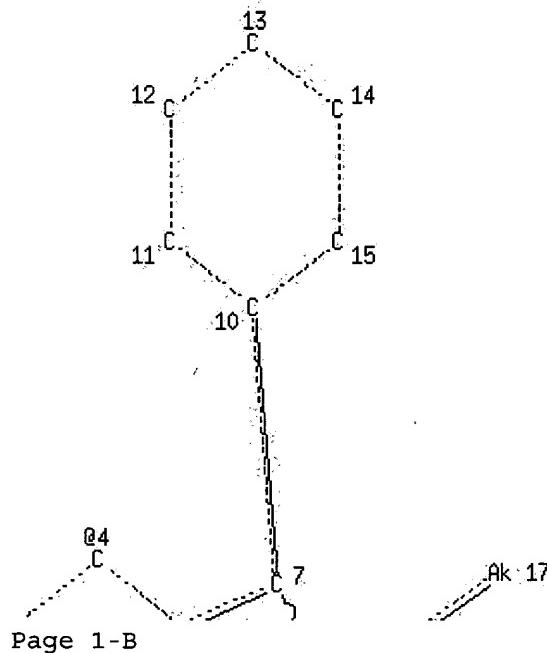
Please note that search-term pricing does apply when conducting SmartSELECT searches.

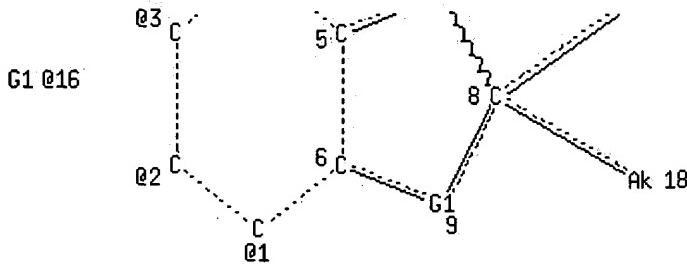
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=>
 L5 STRUCTURE UPLOADED

=> d 15
 L5 HAS NO ANSWERS
 L5 STR
 0 19 S 20
 Page 1-A





Page 2-B

VAR G1=19/20

VPA 16-1/2/3/4 S

NODE ATTRIBUTES:

| | | | |
|-------|------|----|----|
| NSPEC | IS R | AT | 1 |
| NSPEC | IS R | AT | 2 |
| NSPEC | IS R | AT | 3 |
| NSPEC | IS R | AT | 4 |
| NSPEC | IS R | AT | 5 |
| NSPEC | IS R | AT | 6 |
| NSPEC | IS R | AT | 7 |
| NSPEC | IS R | AT | 8 |
| NSPEC | IS R | AT | 9 |
| NSPEC | IS R | AT | 10 |
| NSPEC | IS R | AT | 11 |
| NSPEC | IS R | AT | 12 |
| NSPEC | IS R | AT | 13 |
| NSPEC | IS R | AT | 14 |
| NSPEC | IS R | AT | 15 |
| NSPEC | IS C | AT | 16 |
| NSPEC | IS C | AT | 17 |
| NSPEC | IS C | AT | 18 |

DEFAULT MLEVEL IS ATOM

MLEVEL IS CLASS AT 17 18

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

=> s 15

SAMPLE SEARCH INITIATED 08:25:45 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1143 TO ITERATE

87.5% PROCESSED 1000 ITERATIONS

3 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**

PROJECTED ITERATIONS: 20832 TO 24888

PROJECTED ANSWERS: 3 TO 179

L6 3 SEA SSS SAM L5

=> s 15 full

THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 147.75 U.S. DOLLARS

DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
 FULL SEARCH INITIATED 08:25:53 FILE 'REGISTRY'
 FULL SCREEN SEARCH COMPLETED - 23107 TO ITERATE

100.0% PROCESSED 23107 ITERATIONS 96 ANSWERS
 SEARCH TIME: 00.00.01

L7 96 SEA SSS FUL L5

```
=> file hcaplus
COST IN U.S. DOLLARS          SINCE FILE      TOTAL
                                ENTRY           SESSION
FULL ESTIMATED COST          148.55         301.16
```

FILE 'HCAPLUS' ENTERED AT 08:25:58 ON 08 SEP 2003
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FILE COVERS 1907 - 8 Sep 2003 VOL 139 ISS 11
 FILE LAST UPDATED: 7 Sep 2003 (20030907/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s 17
 L8 5 L7

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=> s 18 and pd ohkawa, s?/au
  0 PD OHKAWA, S?/AU
  L9 0 L8 AND PD OHKAWA, S?/AU
```

```
=> s 18 and pd < july 1997
  18057329 PD < JULY 1997
  (PD<19970700)
  L10 3 L8 AND PD < JULY 1997
```

=> d 110, ibib abs fhitstr, 1-3

L10 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN

| | |
|-----------|-------------------|
| Full Text | Citing References |
|-----------|-------------------|

ACCESSION NUMBER: 1988:549335 HCAPLUS
 DOCUMENT NUMBER: 109:149335
 TITLE: Preparation of 5-hydroxycoumaran derivatives as cardiovascular and antiallergy agents
 INVENTOR(S): Terao, Shinji; Maki, Yoshitaka
 PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan

SOURCE: Eur. Pat. Appl., 39 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

DOCUMENT TYPE: Patent
LANGUAGE: English

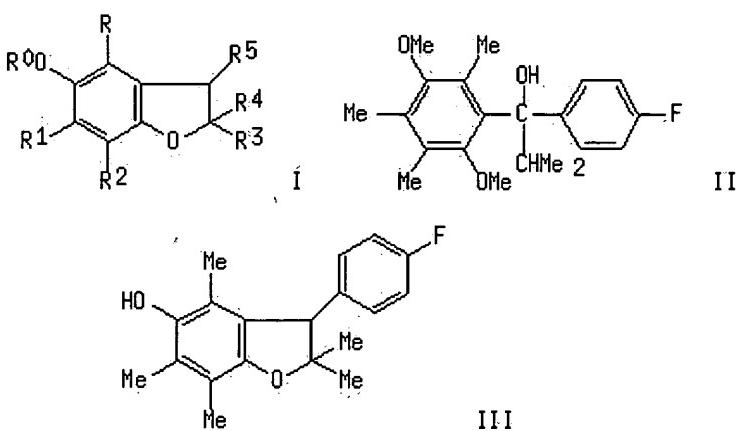
FAMILY ACC NUM COUNT: 1

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|------|----------|-----------------------|--------------|
| <u>EP 273647</u> | A1 | 19880706 | <u>EP 1987-311122</u> | 19871217 <-- |
| <u>EP 273647</u> | B1 | 19920311 | | |
| R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE | | | | |
| <u>JP 01272578</u> | A2 | 19891031 | <u>JP 1987-310346</u> | 19871207 <-- |
| <u>JP 08005871</u> | B4 | 19960124 | | |
| <u>AT 73448</u> | E | 19920315 | <u>AT 1987-311122</u> | 19871217 <-- |
| <u>DK 8706789</u> | A | 19880628 | <u>DK 1987-6789</u> | 19871222 <-- |
| <u>US 4857516</u> | A | 19890815 | <u>US 1987-136273</u> | 19871222 <-- |
| <u>HU 48609</u> | A2 | 19890628 | <u>HU 1987-5988</u> | 19871223 <-- |
| <u>HU 206332</u> | B | 19921028 | | |
| <u>AU 8783040</u> | A1 | 19880630 | <u>AU 1987-83040</u> | 19871224 <-- |
| <u>AU 605818</u> | B2 | 19910124 | | |
| <u>CA 1325635</u> | A1 | 19931228 | <u>CA 1987-555344</u> | 19871224 <-- |
| <u>PRIORITY APPLN. INFO.:</u> | | | | |
| | | | <u>JP 1986-313380</u> | 19861227 |
| | | | <u>JP 1987-235491</u> | 19870918 |
| | | | <u>EP 1987-311122</u> | 19871217 |

OTHER SOURCE(S) : CASREACT 108-14835; MAPCAT 108-14835

61



AB The title compds. [I; R = alkyl; R₀ = H, acyl; R₁-R₄ = (un)substituted alkyl; R₁R₂ = CH:CHCH:CH; R₃R₄ = polymethylene; R₅ = (un)substituted alkyl, aryl, heterocycl] were prep'd. 4-FC₆H₄COCHMe₂ (prepn. given) was added to 1-bromo-2,5-dimethoxy-3,4,6-trimethylbenzene in THF previously treated with BuLi and the mixt. stirred 1 h to give 92.3% diphenylpropanol II which was refluxed 18 h in 47 wt.% aq. HBr to give 74.8% title compd. III. The latter, at 100 mg/kg orally gave 93% inhibition of the excitatory behavior induced by spinal intrathecal injection of FeCl₂ soln. in mice.

IT 116674-24-9P

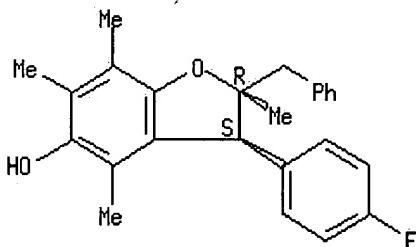
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction of, in prepn. of cardiovascular and antiallergic agents)

RN 116674-24-9 HCAPLUS

CN 5-Benzofuranol, 3-(4-fluorophenyl)-2,3-dihydro-2,4,6,7-tetramethyl-2-

(phenylmethyl)-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



L10 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN

 Full Text Citing References

ACCESSION NUMBER: 1988:112209 HCAPLUS
 DOCUMENT NUMBER: 108:112209
 TITLE: A process for the preparation of 2,3-dihydrobenzofuran derivatives from resorcinol derivatives
 INVENTOR(S): Takahashi, Katsuya; Hashimoto, Isao
 PATENT ASSIGNEE(S): Mitsui Petrochemical Industries, Ltd., Japan
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|-------------|------|----------|-----------------|--------------|
| JP 62138487 | A2 | 19870622 | JP 1985-279193 | 19851213 <-- |
| JP 04046273 | B4 | 19920729 | | |

PRIORITY APPLN. INFO.: JP 1985-279193 19851213

GI For diagram(s), see printed CA Issue.

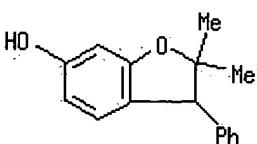
AB The title compds. (I), useful as intermediates for agrochems., pharmaceuticals, and perfumes, are prep'd. from 1,3-dihydroxybenzenes (II).

IT 113168-21-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prep'n. of, by cyclocondensation of resorcinol with ketone)

RN 113168-21-1 HCAPLUS

CN 6-Benzofuranol, 2,3-dihydro-2,2-dimethyl-3-phenyl- (9CI) (CA INDEX NAME)



L10 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2003 ACS on STN

 Full Text Citing References

ACCESSION NUMBER: 1971:463523 HCAPLUS
 DOCUMENT NUMBER: 75:63523
 TITLE: Photolysis of 2-(benzyloxy)-4-(dodecyloxy)benzophenone and 2-isopropoxy-4-methoxybenzophenone
 AUTHOR(S): Lappin, Gerald R.; Zannucci, J. S.
 CORPORATE SOURCE: Tennessee Eastman Co. Div., Eastman Kodak Co.,

SOURCE: Kingsport, TN, USA
 Journal of Organic Chemistry (1971), 36(13), 1808-11
 CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal
 LANGUAGE: English

GI For diagram(s), see printed CA Issue.

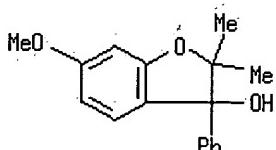
AB The photolysis of 2-(benzyloxy)-4-(dodecyloxy)benzophenone (I) or of 2-isopropoxy-4-methoxybenzophenone (II) proceeded mainly via ring closure between the carbonyl C and the α carbon of the 2 substituent to give 6-(dodecyloxy)-2,3-dihydro-2,3-diphenyl-3-benzofuranol (III) or 2,3-dihydro-2,2-dimethyl-6-methoxy-3-phenyl-3-benzofuranol (IV), resp. The quantum efficiencies for disappearance of starting ketone and for cyclization decreased significantly with an increase in solvent polarity. The lifetime of the excited state, believed to be $3(n, \pi^*)$, was about 3 8-10 μ sec, unusually short for a benzophenone. Further photolysis of I or III resulted in dehydration to give 6-(dodecyloxy)-2,3-diphenylbenzofuran (V) and partial cyclization of V to 11-(dodecyloxy)benzo[b]phenanthro[9,10-d]furan, but further photolysis of IV gave only 2-hydroxy-4-methoxybenzophenone. Both I and II gave the corresponding 4-alkoxy-2-hydroxybenzophenone as a minor product.

IT 28856-53-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prep. of)

RN 28856-53-3 HCAPLUS

CN 3-Benzofuranol, 2,3-dihydro-6-methoxy-2,2-dimethyl-3-phenyl- (8CI) (CA INDEX NAME)



=> file caold

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

FULL ESTIMATED COST

ENTRY

SESSION

18.12 319.28

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

CA SUBSCRIBER PRICE

ENTRY

SESSION

-1.95 -1.95

FILE 'CAOLD' ENTERED AT 08:26:59 ON 08 SEP 2003

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FILE COVERS 1907-1966

FILE LAST UPDATED: 01 May 1997 (19970501/UP)

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=> d his

(FILE 'HOME' ENTERED AT 08:20:33 ON 08 SEP 2003)

FILE 'REGISTRY' ENTERED AT 08:20:40 ON 08 SEP 2003

L1 STRUCTURE UPLOADED
L2 50 S L1
L3 2122 S L1 FULL

FILE 'HCAPLUS' ENTERED AT 08:24:21 ON 08 SEP 2003

L4 629 S L3

FILE 'REGISTRY' ENTERED AT 08:24:49 ON 08 SEP 2003

L5 STRUCTURE UPLOADED
L6 3 S L5
L7 96 S L5 FULL

FILE 'HCAPLUS' ENTERED AT 08:25:58 ON 08 SEP 2003

L8 5 S L7
L9 0 S L8 AND PD OHKAWA, S?/AU
L10 3 S L8 AND PD < JULY 1997

FILE 'CAOLD' ENTERED AT 08:26:59 ON 08 SEP 2003

=> s 17
L11 0 L7

=> file reg

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|--|------------------|---------------|
| FULL ESTIMATED COST | 0.40 | 319.68 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
| CA SUBSCRIBER PRICE | 0.00 | -1.95 |

FILE 'REGISTRY' ENTERED AT 08:27:10 ON 08 SEP 2003

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9

DICTIONARY FILE UPDATES: 7 SEP 2003 HIGHEST RN 581049-54-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

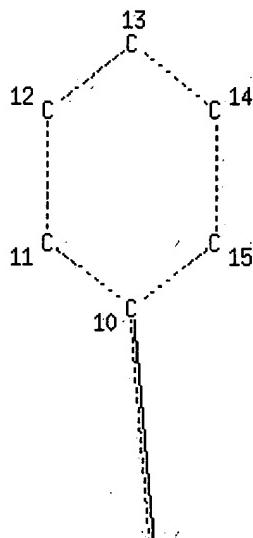
Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties

in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

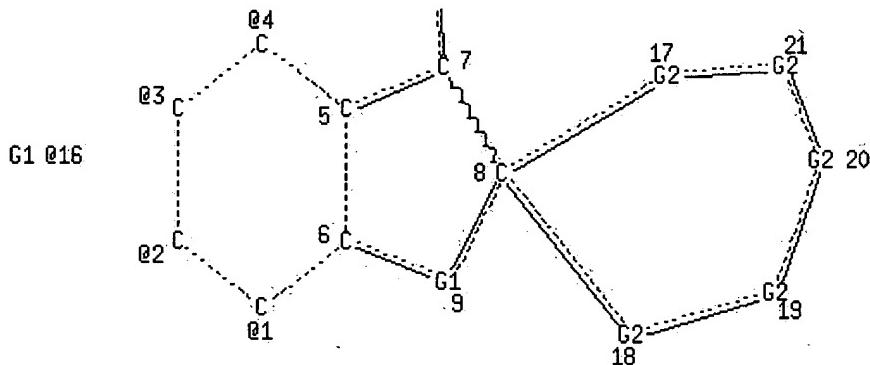
=> L12 STRUCTURE UPLOADED

=> d 112
L12 HAS NO ANSWERS
L12 STR
C 24 N 25

0 22 S.23
Page 1-A



Page 1-B



Page 2-B
VAR G1=22/23
VAR G2=24/25
VPA 16-1/2/3/4 S
NODE ATTRIBUTES:

| | | | |
|-------|------|----|---|
| NSPEC | IS R | AT | 1 |
| NSPEC | IS R | AT | 2 |
| NSPEC | IS R | AT | 3 |
| NSPEC | IS R | AT | 4 |
| NSPEC | IS R | AT | 5 |
| NSPEC | IS R | AT | 6 |
| NSPEC | IS R | AT | 7 |
| NSPEC | IS R | AT | 8 |
| NSPEC | IS R | AT | 9 |

NSPEC IS R AT 10
 NSPEC IS R AT 11
 NSPEC IS R AT 12
 NSPEC IS R AT 13
 NSPEC IS R AT 14
 NSPEC IS R AT 15
 NSPEC IS C AT 16
 NSPEC IS R AT 17
 NSPEC IS R AT 18
 NSPEC IS R AT 19
 NSPEC IS R AT 20
 NSPEC IS R AT 21

DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RSPEC I

NUMBER OF NODES IS 25

STEREO ATTRIBUTES: NONE

=> s 112
 SAMPLE SEARCH INITIATED 08:29:49 FILE 'REGISTRY'
 SAMPLE SCREEN SEARCH COMPLETED - 1143 TO ITERATE

87.5% PROCESSED 1000 ITERATIONS 1 ANSWERS
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
 BATCH **COMPLETE**
 PROJECTED ITERATIONS: 20832 TO 24888
 PROJECTED ANSWERS: 1 TO 86

L13 1 SEA SSS SAM L12

=> s 112 full
 THE ESTIMATED SEARCH COST FOR FILE 'REGISTRY' IS 147.75 U.S. DOLLARS
 DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N or END:y
 FULL SEARCH INITIATED 08:29:54 FILE 'REGISTRY'
 FULL SCREEN SEARCH COMPLETED - 23107. TO ITERATE

100.0% PROCESSED 23107 ITERATIONS 10 ANSWERS
 SEARCH TIME: 00.00.01

L14 10 SEA SSS FUL L12

=> file hcaplus
 COST IN U.S. DOLLARS SINCE FILE TOTAL
 ENTRY SESSION
 FULL ESTIMATED COST 149.75 469.43
 DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) SINCE FILE TOTAL
 ENTRY SESSION
 CA SUBSCRIBER PRICE 0.00 -1.95

FILE 'HCAPLUS' ENTERED AT 08:29:58 ON 08 SEP 2003
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FILE COVERS 1907 - 8 Sep 2003 VOL 139 ISS 11
FILE LAST UPDATED: 7 Sep 2003 (20030907/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

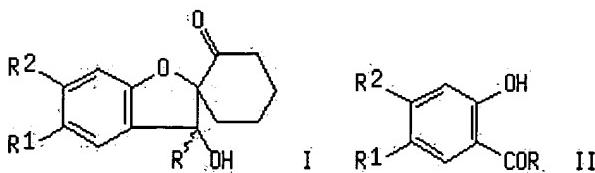
=> s 114
L15 4 L14

=> s 115 and pd < july 1997
18057329 PD < JULY 1997
(PD<19970700)
L16 2 L15 AND PD < JULY 1997

=> d 116, ibib abs fhitstr, 1-2

L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2003 ACS on STN

| | Full Text | Citing References |
|-------------------|---|-------------------|
| ACCESSION NUMBER: | 1993:670938 | HCAPLUS |
| DOCUMENT NUMBER: | 119:270938 | |
| TITLE: | An expedient route to spirobenzofurans | |
| AUTHOR(S): | Sumathi, T.; Balasubramanian, K. K. | |
| CORPORATE SOURCE: | Dep. Chem., Indian Inst. Technol., Madras, 600 036, India | |
| SOURCE: | Tetrahedron Letters (1993), 34(24), 3915-8 | |
| DOCUMENT TYPE: | CODEN: TELEAY; ISSN: 0040-4039 | |
| LANGUAGE: | Journal | |
| OTHER SOURCE (S): | English | |
| GI | CASREACT 119:270938 | |



AB The synthesis of spirobenzofurans I (R = H, Me, Ph; R1 = H, Cl, Me, OMe; R2 = H, OMe) via base-mediated spiroannulation of arom. aldehydes and ketones II with 2-chlorocyclohexanone is reported.

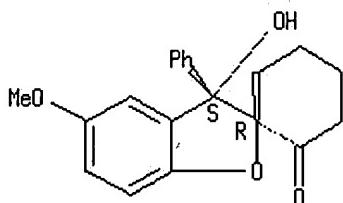
IT 151424-49-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prep. of)

RN 151424-49-6 HCAPLUS

CN Spiro[benzofuran-2(3H),1'-cyclohexan]-2'-one, 3-hydroxy-5-methoxy-3-phenyl-, cis- (9CI) (CA INDEX NAME)

Relative stereochemistry.

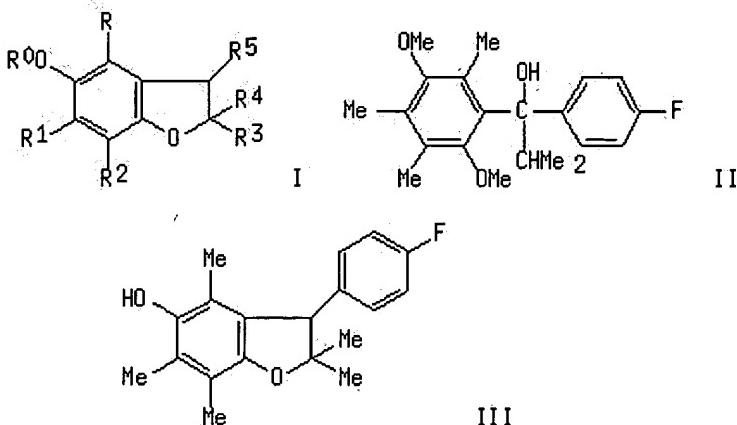


L16 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2003 ACS on STN

| | |
|-----------|-------------------|
| Full Text | Citing References |
|-----------|-------------------|

ACCESSION NUMBER: 1988:549335 HCAPLUS
 DOCUMENT NUMBER: 109:149335
 TITLE: Preparation of 5-hydroxycoumaran derivatives as cardiovascular and antiallergy agents
 INVENTOR(S): Terao, Shinji; Maki, Yoshitaka
 PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
 SOURCE: Eur. Pat. Appl., 39 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|--|----------|-----------------|--------------|
| EP 273647 | A1 | 19880706 | EP 1987-311122 | 19871217 <-- |
| EP 273647 | B1 | 19920311 | | |
| R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE | | | | |
| JP 01272578 | A2 | 19891031 | JP 1987-310346 | 19871207 <-- |
| JP 08005871 | B4 | 19960124 | | |
| AT 73448 | E | 19920315 | AT 1987-311122 | 19871217 <-- |
| DK 8706789 | A | 19880628 | DK 1987-6789 | 19871222 <-- |
| US 4857516 | A | 19890815 | US 1987-136273 | 19871222 <-- |
| HU 48609 | A2 | 19890628 | HU 1987-5988 | 19871223 <-- |
| HU 206332 | B | 19921028 | | |
| AU 8783040 | A1 | 19880630 | AU 1987-83040 | 19871224 <-- |
| AU 605818 | B2 | 19910124 | | |
| CA 1325635 | A1 | 19931228 | CA 1987-555354 | 19871224 <-- |
| PRIORITY APPLN. INFO.: | | | JP 1986-313380 | 19861227 |
| | | | JP 1987-235491 | 19870918 |
| | | | EP 1987-311122 | 19871217 |
| OTHER SOURCE(S): | CASREACT 109:149335; MARPAT 109:149335 | | | |
| GI | | | | |



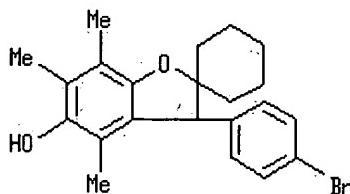
AB The title compds. [I; R = alkyl; R₀ = H, acyl; R₁-R₄ = (un)substituted alkyl; R₁R₂ = CH:CHCH:CH; R₃R₄ = polymethylene; R₅ = (un)substituted alkyl, aryl, heterocyclyl] were prep'd. 4-FC₆H₄COCHMe₂ (prepn. given) was added to 1-bromo-2,5-dimethoxy-3,4,6-trimethylbenzene in THF previously treated with BuLi and the mixt. stirred 1 h to give 92.3% diphenylpropanol II which was refluxed 18 h in 47 wt.% aq. HBr to give 74.8% title compd. III. The latter, at 100 mg/kg orally gave 93% inhibition of the excitatory behavior induced by spinal intrathecal injection of FeCl₂ soln. in mice.

IT 116674-27-2P

RL: SPN (Synthetic preparation); PREP (Preparation)
(prépn. of, as cardiovascular and antiallergic agent)

RN 116674-27-2 HCAPLUS

CN Spiro[benzofuran-2(3H),1'-cyclohexan]-5-ol, 3-(4-bromophenyl)-4,6,7-trimethyl- (9CI) (CA INDEX NAME)



=> file caold

COST IN U.S. DOLLARS

SINCE FILE TOTAL
ENTRY SESSION

FULL ESTIMATED COST

11.33 480.76

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE TOTAL
ENTRY SESSION

CA SUBSCRIBER PRICE

ENR1 SESSION =1 30 =3 25

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FILE COVERS 1807-1866

FILE COVERS 1987-1988
FILE LAST UPDATED: 01 May 1997 (19970501/JR)

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| | | | |
|--|------------------|---------------|--|
| => file caold | | | |
| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION | |
| FULL ESTIMATED COST | 0.40 | 481.16 | |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION | |
| CA SUBSCRIBER PRICE | 0.00 | -3.25 | |

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FILE COVERS 1907-1966
 FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

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(FILE 'HOME' ENTERED AT 08:20:33 ON 08 SEP 2003)

FILE 'REGISTRY' ENTERED AT 08:20:40 ON 08 SEP 2003
 L1 STRUCTURE uploaded
 L2 50 S L1
 L3 2122 S L1 FULL

FILE 'HCAPLUS' ENTERED AT 08:24:21 ON 08 SEP 2003
 L4 629 S L3

FILE 'REGISTRY' ENTERED AT 08:24:49 ON 08 SEP 2003
 L5 STRUCTURE uploaded
 L6 3 S L5
 L7 96 S L5 FULL

FILE 'HCAPLUS' ENTERED AT 08:25:58 ON 08 SEP 2003
 L8 5 S L7
 L9 0 S L8 AND PD OHKAWA, S?/AU
 L10 3 S L8 AND PD < JULY 1997

FILE 'CAOLD' ENTERED AT 08:26:59 ON 08 SEP 2003

L11 0 S L7

FILE 'REGISTRY' ENTERED AT 08:27:10 ON 08 SEP 2003
L12 STRUCTURE uploaded
L13 1 S L12
L14 10 S L12 FULL

FILE 'HCAPLUS' ENTERED AT 08:29:58 ON 08 SEP 2003
L15 4 S L14
L16 2 S L15 AND PD < JULY 1997

FILE 'CAOLD' ENTERED AT 08:30:38 ON 08 SEP 2003

FILE 'CAOLD' ENTERED AT 08:30:43 ON 08 SEP 2003

=> s l14

L17 0 L14

=> log y

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|--|------------------|---------------|
| FULL ESTIMATED COST | 0.40 | 481.56 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
| CA SUBSCRIBER PRICE | 0.00 | -3.25 |

STN INTERNATIONAL LOGOFF AT 08:30:53 ON 08 SEP 2003